

## ABSTRACT

Drug abuse has become a more prevalent problem within the last few years. While the presence of illicit drugs or their metabolites in urine is an evidence of intake. Rapid and sensitive GC method for the simultaneous analysis of codeine, 6-monoacetylmorphine and morphine in urine was developed. Due to low selectivity factor developed and validated separate three GC methods for quantification of these drugs.

Methods for the determination of morphine, codeine and 6-monoacetylmorphine in biological samples, extracted using Liquid-Liquid extraction and followed by derivatization. The analysis was carried out on GC/MS Agilent 5975C MSD triple axis detector and 7890A GC, with temperature programing and helium was used as carrier gas. Selective Ion Monitoring (SIM) mode was used to quantify codeine, 6-monoacetylmorphine and morphine.

The linear range for the codeine, 6-monoacetylmorphine and morphine were 200-1000 ng/ml. 0.9990, 0.9937 and 0.9991 were the linearity of the calibration curve of codeine, 6-monoacetylmorphine and morphine. 2.27, 2.14 and 2.22 were obtained as the LOD and the 2.60, 2.47 and 2.66 were obtained as the LOQ of the codeine, 6-monoacetylmorphine and morphine respectively.

This developed method was successfully used for the determination of Codeine, 6-Monoacetylmorphine and Morphine in Human urine for forensic identification study.

